

## SEQUENCE LISTING

<110> TOLEDANO, MICHEL  
BITEAU, BENOIT

<120> APPLICATIONS OF A NEW CLASS OF ENZYMES: SULFIREDOXINS

<130> 40528U

<140> 10/563,375

<141> 2006-01-04

<150> PCT/FR04/01727

<151> 2004-07-02

<150> FR 03/08212

<151> 2003-07-04

<160> 17

<170> PatentIn Ver. 3.3

<210> 1

<211> 127

<212> PRT

<213> *Saccharomyces cerevisiae*

<400> 1

Met	Ser	Leu	Gln	Ser	Asn	Ser	Val	Lys	Pro	Thr	Glu	Ile	Pro	Leu	Ser
1				5					10					15	

Glu	Ile	Arg	Arg	Pro	Leu	Ala	Pro	Val	Leu	Asp	Pro	Gln	Lys	Ile	Asp
		20						25					30		

Ala	Met	Val	Ala	Thr	Met	Lys	Gly	Ile	Pro	Thr	Ala	Ser	Lys	Thr	Cys
		35					40					45			

Ser	Leu	Glu	Gln	Ala	Glu	Ala	Ala	Ala	Ser	Ala	Gly	Glu	Leu	Pro	Pro
	50					55					60				

Val	Asp	Val	Leu	Gly	Val	Arg	Val	Lys	Gly	Gln	Thr	Leu	Tyr	Tyr	Ala
65					70					75					80

Phe	Gly	Gly	Cys	His	Arg	Leu	Gln	Ala	Tyr	Asp	Arg	Arg	Ala	Arg	Glu
				85					90					95	

Thr	Gln	Asn	Ala	Ala	Phe	Pro	Val	Arg	Cys	Arg	Val	Leu	Pro	Ala	Thr
			100					105					110		

Pro	Arg	Gln	Ile	Arg	Met	Tyr	Leu	Gly	Ser	Ser	Leu	Asp	Ile	Glu	
		115					120					125			

<210> 2

<211> 120

<212> PRT

<213> *Candida albicans*

&lt;400&gt; 2

Met Ser Met Tyr Thr Ser Arg Leu Ala Thr Glu Tyr Val Pro Leu Ser  
 1 5 10 15  
 Glu Ile Lys Arg Pro Ile Pro Pro Val Leu Asp Tyr Gln Lys Ile Asp  
 20 25 30  
 Ala Met Leu Ser Thr Leu Lys Gly Val Pro Met Glu Ser Ala Thr Cys  
 35 40 45  
 Lys Val Glu Asp Ile Thr Ala Gly Glu Leu Pro Pro Ile Asp Val Phe  
 50 55 60  
 Lys Ile Arg Glu Asn Gly Lys Asn Phe Tyr Phe Ala Phe Gly Gly Cys  
 65 70 75 80  
 His Arg Phe Gln Ala Tyr Asp Arg Ile Ser Lys Glu Thr Glu Lys Glu  
 85 90 95  
 Val Met Val Lys Ser Arg Ile Leu Pro Ala Thr Arg Lys Ser Leu Arg  
 100 105 110  
 Ile Tyr Leu Gly Ala Ser Val Asp  
 115 120

&lt;210&gt; 3

&lt;211&gt; 124

&lt;212&gt; PRT

&lt;213&gt; Schizosaccharomyces pombe

&lt;400&gt; 3

Met Thr Ser Ile His Thr Gly Ser Asn Asn Asn Ile Val Glu Leu Asp  
 1 5 10 15  
 Met Ser Glu Leu Ile Arg Pro Ile Pro Pro Val Leu Asp Met Asn Lys  
 20 25 30  
 Val Asn Ser Met Met Glu Thr Met Thr Gly Lys Thr Pro Pro Ala Ser  
 35 40 45  
 Cys Gly Leu Thr Ser Glu Asp Leu Glu Ala Gly Glu Leu Pro Pro Val  
 50 55 60  
 Asp Val Leu Thr Phe Lys Lys Ser Gly Lys Pro Tyr Tyr Phe Ala Phe  
 65 70 75 80  
 Gly Gly Cys His Arg Leu Arg Ala His Asp Glu Ala Gly Arg Lys Lys  
 85 90 95  
 Val Arg Cys Lys Leu Val Asn Cys Ser Pro Asn Thr Leu Arg Leu Tyr  
 100 105 110  
 Leu Gly Ala Ser Ala Asn Lys Phe Leu Asp Ser Asp  
 115 120

<210> 4  
 <211> 137  
 <212> PRT  
 <213> Homo sapiens

<400> 4  
 Met Gly Leu Arg Ala Gly Gly Thr Leu Gly Arg Ala Gly Ala Gly Arg  
   1                  5                  10                  15  
 Gly Ala Pro Glu Gly Pro Gly Pro Ser Gly Gly Ala Gln Gly Gly Ser  
                   20                  25                  30  
 Ile His Ser Gly Arg Ile Ala Ala Val His Asn Val Pro Leu Ser Val  
           35                  40                  45  
 Leu Ile Arg Pro Leu Pro Ser Val Leu Asp Pro Ala Lys Val Gln Ser  
   50                  55                  60  
 Leu Val Asp Thr Ile Arg Glu Asp Pro Asp Ser Val Pro Pro Ile Asp  
   65                  70                  75                  80  
 Val Leu Trp Ile Lys Gly Ala Gln Gly Gly Asp Tyr Phe Tyr Ser Phe  
                   85                  90                  95  
 Gly Gly Cys His Arg Tyr Ala Ala Tyr Gln Gln Leu Gln Arg Glu Thr  
                   100                  105                  110  
 Ile Pro Ala Lys Leu Val Gln Ser Thr Leu Ser Asp Leu Arg Val Tyr  
   115                  120                  125  
 Leu Gly Ala Ser Thr Pro Asp Leu Gln  
   130                  135

<210> 5  
 <211> 136  
 <212> PRT  
 <213> Mus musculus

<400> 5  
 Met Gly Leu Arg Ala Gly Gly Ala Leu Arg Arg Ala Gly Ala Gly Pro  
   1                  5                  10                  15  
 Gly Ala Pro Val Val His Gly Pro Gly Gly Ala Gln Gly Gly Ser Ile  
                   20                  25                  30  
 His Ser Gly Cys Ile Ala Thr Val His Asn Val Pro Ile Ala Val Leu  
   35                  40                  45  
 Ile Arg Pro Leu Pro Ser Val Leu Asp Pro Ala Lys Val Gln Ser Leu  
   50                  55                  60  
 Val Asp Thr Ile Leu Ala Asp Pro Asp Ser Val Pro Pro Ile Asp Val  
   65                  70                  75                  80  
 Leu Trp Ile Lys Gly Ala Gln Gly Gly Asp Tyr Tyr Tyr Ser Phe Gly  
                   85                  90                  95

Gly Cys His Arg Tyr Ala Ala Tyr Gln Gln Leu Gln Arg Glu Thr Ile  
                   100                  105                  110

Pro Ala Lys Leu Val Arg Ser Thr Leu Ser Asp Leu Arg Met Tyr Leu  
           115                  120                  125

Gly Ala Ser Thr Pro Asp Leu Gln  
       130                  135

<210> 6

<211> 162

<212> PRT

<213> *Drosophila melanogaster*

<400> 6

Met Glu Phe Ile Ser His Phe Leu Arg Ala Thr Ser Arg Arg Thr Ala  
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Ala Leu Gly Pro Ile Leu Gln Arg Asn Arg Ser Glu Ile Ile Gln Lys  
           20                  25                  30

Gln Ser Leu Thr Asn Arg Gln Ala Phe Arg Arg Tyr Arg Ser Ser Cys  
           35                  40                  45

Ser Thr Met Asp Thr Thr Val His Ser Ala Gly Ile Asp Glu Thr His  
       50                  55                  60

Leu Val Pro Met Ser Val Ile Gln Arg Pro Ile Pro Ser Val Leu Asp  
       65                  70                  75                  80

Glu Gln Lys Val Gln Ser Leu Met Glu Thr Ile Lys Asn Glu Thr Ser  
           85                  90                  95

Glu Asp Glu Val Pro Pro Ile Asp Leu Leu Trp Ile Ser Gly Ser Glu  
           100                  105                  110

Gly Gly Asp Tyr Tyr Phe Ser Phe Gly Gly Cys His Arg Phe Glu Ala  
           115                  120                  125

Tyr Lys Arg Leu Gln Arg Pro Thr Ile Lys Ala Lys Leu Val Lys Ser  
       130                  135                  140

Thr Leu Gly Asp Leu Tyr His Tyr Met Gly Ser Ser Ala Pro Lys Tyr  
       145                  150                  155                  160

Leu Ala

<210> 7

<211> 125

<212> PRT

<213> *Arabidopsis thaliana*

<400> 7

Met Ala Asn Leu Met Met Arg Leu Pro Ile Ser Leu Arg Ser Phe Ser  
       1                  5                  10                  15

Val Ser Ala Ser Ser Ser Asn Gly Ser Pro Pro Val Ile Gly Gly Ser  
                   20                  25                  30  
 Ser Gly Gly Val Gly Pro Met Ile Val Glu Leu Pro Leu Glu Lys Ile  
           35                  40                  45  
 Arg Arg Pro Leu Met Arg Thr Arg Ser Asn Asp Gln Asn Lys Val Lys  
       50                  55                  60  
 Glu Leu Met Asp Ser Ile Arg Gln Ile Gly Leu Gln Val Pro Ile Asp  
       65                  70                  75                  80  
 Val Ile Glu Val Asp Gly Thr Tyr Tyr Gly Phe Ser Gly Cys His Arg  
                   85                  90                  95  
 Tyr Glu Ala His Gln Lys Leu Gly Leu Pro Thr Ile Arg Cys Lys Ile  
           100                  105                  110  
 Arg Lys Gly Thr Lys Glu Thr Leu Arg His His Leu Arg  
           115                  120                  125

<210> 8  
 <211> 86  
 <212> PRT  
 <213> Thermosynechococcus elongatus

<400> 8  
 Met Arg Val Leu Asp Leu Pro Leu Asn Ala Ile Arg Arg Pro Leu Val  
       1                  5                  10                  15  
 Arg Gln Thr Asp Pro Ala Lys Val Ala Ala Leu Met Ala Ser Ile Ala  
           20                  25                  30  
 Glu Ile Gly Gln Gln Glu Pro Ile Asp Val Leu Glu Val Glu Gly His  
           35                  40                  45  
 Tyr Tyr Gly Phe Ser Gly Cys His Arg Tyr Glu Ala Cys Gln Arg Leu  
           50                  55                  60  
 Gly Leu Pro Thr Ile Arg Ala Arg Val Arg Arg Ala Pro Arg Ser Val  
       65                  70                  75                  80  
 Leu Asn Leu His Leu Ala  
                   85

<210> 9  
 <211> 87  
 <212> PRT  
 <213> Nostoc sp.

<400> 9  
 Met Val Arg Val Gln Glu Ile Pro Leu Asn Gln Ile Arg Arg Pro Leu  
       1                  5                  10                  15

Pro Arg Gly Asn Asp Pro Tyr Lys Val Gln Ala Leu Met Glu Ser Ile  
                   20                  25                  30

Ala Ala Ile Gly Gln Gln Glu Pro Ile Asp Val Leu Glu Val Asp Gly  
                   35                  40                  45

Gln Tyr Tyr Gly Phe Ser Gly Cys His Arg Tyr Glu Ala Cys Gln Arg  
                   50                  55                  60

Leu Gly Lys Glu Thr Ile Leu Ala Arg Val Arg Lys Ala Pro Arg Ser  
                   65                  70                  75                  80

Val Leu Lys Met His Leu Ala  
                                   85

<210> 10  
 <211> 141  
 <212> PRT  
 <213> Oryza sativa

<400> 10  
 Met Ala Ala Ser Gly Phe Leu Leu Arg Cys Pro Ala Ala Pro Ser Ala  
           1                  5                  10                  15

Val Pro Leu Trp Gly Arg Ser Gly Arg Gly Gly Gly Gly Gly Leu Ala  
                   20                  25                  30

Phe Ser Ala Ser Ser Ser Asn Gly Ala Ala Val Pro Ser Ser Leu Ser  
                   35                  40                  45

Asp Ser Glu Lys Lys Gly Pro Val Val Met Glu Ile Pro Leu Asp Lys  
                   50                  55                  60

Ile Arg Arg Pro Leu Met Arg Thr Arg Ala Asn Asp Pro Ala Lys Val  
                   65                  70                  75                  80

Gln Glu Leu Met Asp Ser Ile Arg Val Ile Gly Leu Gln Val Pro Ile  
                   85                  90                  95

Asp Val Leu Glu Val Asp Gly Val Tyr Tyr Gly Phe Ser Gly Cys His  
                   100                  105                  110

Arg Tyr Glu Ala His Gln Arg Leu Gly Leu Pro Thr Ile Arg Cys Lys  
                   115                  120                  125

Val Arg Arg Gly Thr Lys Glu Thr Leu Arg Ile Gly Cys  
                   130                  135                  140

<210> 11  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
           primer

<400> 11  
gtcccgcggc ggcggcgacg 20

<210> 12  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 12  
agcaggtgcc aaggaggctg 20

<210> 13  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 13  
ttaattgaat tcatggggct gcgtgcagga gg 32

<210> 14  
<211> 44  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 14  
ttttcctttt gcggccgcct actactgcaa gtctggtgtg gatg 44

<210> 15  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<220>  
<221> MOD\_RES  
<222> (2)  
<223> Gly or Ser

<400> 15  
Phe Xaa Gly Cys His Arg  
1 5

<210> 16  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<400> 16  
Phe Ser Gly Cys His Arg  
1 5

<210> 17  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
6xHis tag

<400> 17  
His His His His His His  
1 5